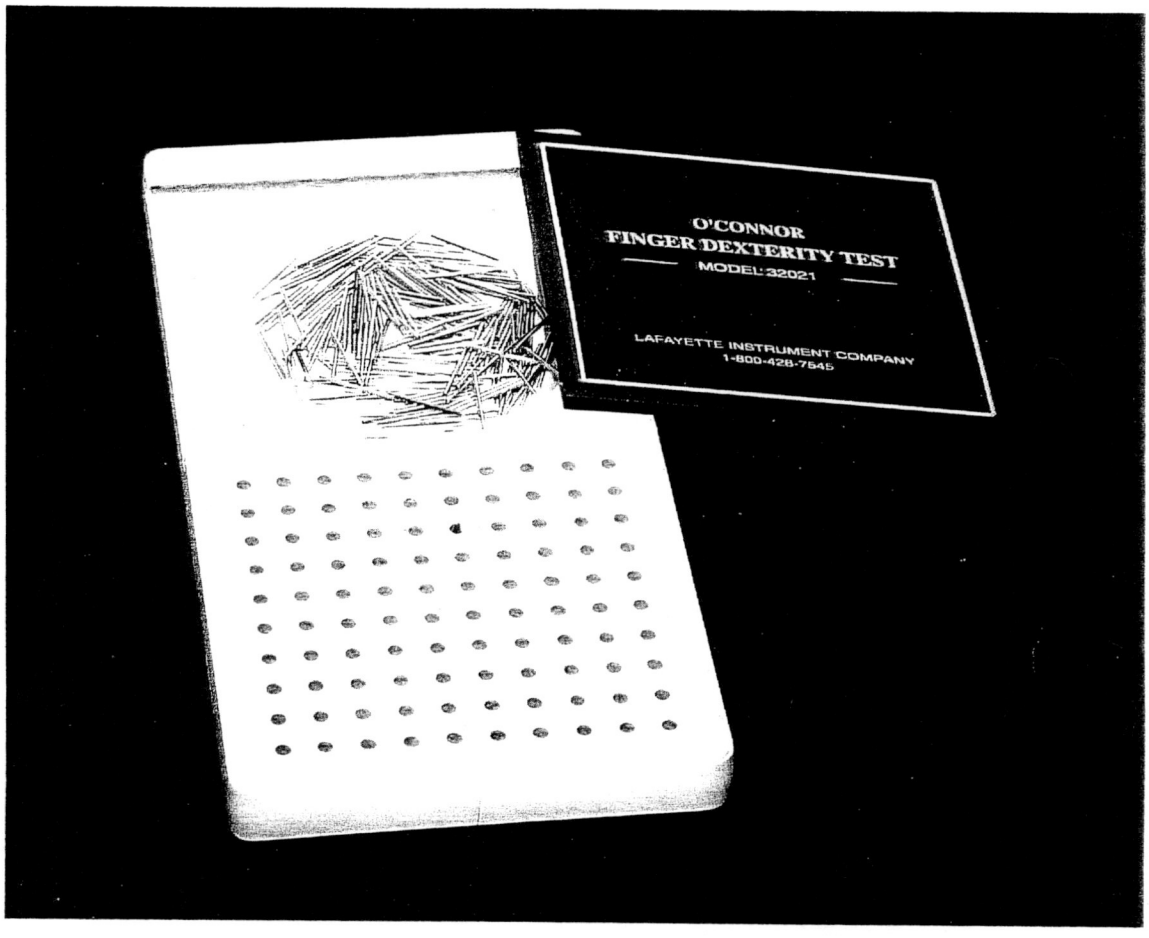
O'Connor Finger Dexterity Test
User's Manual



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Description

The O'Connor Finger Dexterity Test has been used successfully as a predictor wherever rapid manipulation of objects, especially the picking up and placing of small parts, is important. This is best illustrated in assembly line work such as the setting of pivots, registering of gear train assemblies and many other operations required in the production of meters. It has also been found useful in predicting success in instrument work which requires the assembling of armatures, miniature parts, assembling of clocks and watches, rapid hand work in the filling of vials, small lathe work and machine winding.

Parts

(1) 11 x 5 ½ Formica-topped masonite board with a molded shallow well below which are 100 holes measuring 3/16 inch in diameter arranged in ten rows of ten holes each. Holes are spaced one-half inch apart.

(315) Pins one inch long and about 1/16 inch in diameter. Up to three pins can be inserted in each hole.

Test Administration

Subject

The subject should be seated comfortable at a table measuring approximately 30 inches in height. Place test (pins in well) before the subject about 12" from table's edge and to the subject's right if he/she is right handed. Place test to left if subject is left handed.

Note: Since the rapidity of changing the pins is affected by the condition of the fingernails, it is suggested that all examinees have their fingernails freshly and uniformly clipped.

Examiner

The examiner should read the following instructions: "The board in front of you consists of 100 holes, each hole is large enough to hold three pins. Pick up three pins at a time and fill the holes, placing three pins in each as fast as you can. Use only one hand. Start in the farthest corner from you working left to right (right to left for left handed subjects) and work toward you, like this (instructor demonstrate). If you start in the corner nearest you, your sleeve or finger may catch the pins. Be sure to fill each row completely before you start the next. Do not skip around. There are enough pins in this tray so that if you drop one or two on the floor, you will still have enough left. Do not stop to pick them up. Begin only when I give you the command "BEGIN", and do not stop until the entire board is filled."

Practice

Have the subject place thirty (30) pins, thus filling the top line of ten holes, for practice. Allow neither more nor less than the prescribed practice of filling the top ten holes, since this affects the performance on the test. Tip the pins out, allow a moment's rest.

Test

Instruct the subject to begin. Time accurately with a stopwatch, watching the number of seconds required to fill the board. Record the first fifty holes AND the second fifty.

Total administration time varies, according to a person's speed, from about 8 to 16 minutes.

The score on the FINGER DEXTERITY TEST is computed as follows:

The number of seconds that have been taken to fill the SECOND HALF of the board is multiplied by 1.1. The mean of this value and the number of seconds taken to fill the FIRST HALF of the board is computed; i.e.:

$$\text{Raw Score} = \frac{\text{First Half Time} + (1.1 \times \text{Second Half Time})}{2}$$

Example: If a subject filled the first half of the board in 243 seconds and the second half in 225 seconds, his score would be:

$$\text{R.S.} = (243 + 1.1(225))/2$$
$$= 2.45.25$$

Table 1:

Standard Norms for the O'Connor Finger Dexterity Test

Raw Scores (in seconds)

Men	Women	Standard Score	Percentile Rank
183	166	8.0	99.86
194	175	7.5	99.4
207	186	7.0	97.7
221	197	6.5	93.3
238	211	6.0	84.1
257	226	5.5	69.1
280	244	5.0	50.0
307	265	4.5	30.9
340	290	4.0	15.9
382	319	3.5	6.7
434	356	3.0	2.3
503	402	2.5	0.6
598	462	2.0	0.14

For simplicity in scoring, Table 2 presents the information depicted in Table 1 in compact summarized form.

Table 2:

Standard Scores for Men and Women

Men	Women	Mid Sigma Score	Percentile Range
- 221	- 197	7.0	93.4 – 100.0
222 – 257	198 – 226	6.0	69.2 – 93.3
258 – 397	227 – 265	5.0	30.9 – 69.1
398 – 382	266 – 319	4.0	6.7 – 30.8
383 -	320 -	3.0	0.0 – 6.6

Scores have also been obtained on the basis of occupation. In Table 3, there are six different types of skills with the average standard scores in column 1 and the percentage of people in the general population who do not obtain these scores in column 2.

Table 3:

Standard Scores for Six Occupations

	Standard Score	Population Below this Value
Women engaged in meter and instrument assembly	5.7	76
Bank Tellers	5.86	80
Garage Mechanics	5.03	50
Skilled Workers	4.9	46
Semi-skilled Workers	4.9	46
Butter-Wrappers (1 lb. Blocks)	4.57	36

Women who were successful in the assembling of meters and other instruments had definitely higher scores, on the average, than the general population, and all women in this group who made a standard score of 5.1 or better were successfully employed. Only one-third of those who scored below 5.1 was able to do the work. This fact taken together with other evidence shows that the chances of satisfactory adjustment to factor operations requiring rapid manipulation of small objects are not very good if an employee scores below the average for this test. If he had a score as high as 5.5, it is quite likely that he has the necessary mechanical aptitude. Skilled or semi-skilled operators taken as a whole have, on the average, a higher score than the average entire general population. This shows that the ability measured by this test is a specialized one and also that there are many manual occupations in which it are not involved. It is important to notice that there are several apparently similar but nevertheless distinct kinds of dexterity.

Those who were employed to wrap one-pound packages of butter, for example, did not excel on the average in the kind of dexterity measured by this test but almost all of them did better than the average person on the Minnesota Rate of Manipulation Test.

Statistics

Despite its wide use, relatively little was known about the reliability and validity of this test until recent years.

The University of Minnesota Employment Stabilization Research Institute has provided norms for an adult population and has used the test in developing occupational ability patterns.

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Notes

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2. Shipping charges under warranty are covered only in one direction. The customer is responsible for shipping charges to the factory if return of the part is required.
3. This warranty does not cover damage to components due to improper installation by the customer.
4. Consumable and or expendable items, including but not limited to electrodes, lights, batteries, fuses, O-rings, gaskets, and tubing, are excluded from warranty.
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